REMARKS

In response to the Office Action dated July 1, 2003, claims 1, 4 and 8 are amended. Claims 1-22 are now active in this application. No new matter has been added.

Please note that claim 4 is amended only to delete the redundant recitation of "the previous".

The indication that claims 2, 9-13 and 16 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims is acknowledged and appreciated.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I.   Claims 1, 3, 8 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Garland et al. (hereinafter, Garland) in view of Zarge et al. (hereinafter, Zarge). The Examiner contends that claims 1 and 8 do not recite that estimation is made based on the distances between the respective surfaces of the polygon model before approximation and the vertices of the polygon model after approximation.

To address the Examiner contention and expedite prosecution, claim 1 is amended to recite, *inter alia*:

> calculating estimation values for surfaces to be deformed by shrinking edges or surfaces of a polygon model by converging two or more vertices of the polygon model based on distances between the respective surfaces after each deformation and all of the original vertices involved in the surface deformation...

Independent claim is similarly amended in the section reciting "an estimation value calculator..." Thus, amended independent claims 1 and 8 clearly delineate that estimation is

made based on the distances between the respective surfaces of the polygon model before approximation and the vertices of the polygon model after approximation.

While the Examiner contends that Garland discloses evaluation based on a distance between the vertices of a polygon model before and after deformation, referring to the description "We can associate a set of planes with each vertex, and we can define the error of the vertex with respect to this set as the sum of squared distances to its planes:...", such description is not a disclosure or suggestion of "calculating estimation values for surfaces to be deformed by shrinking edges or surfaces of a polygon model by converging two or more vertices of the polygon model based on distances between the respective surfaces after each deformation and all of the original vertices involved in the surface deformation."

As Garland does not disclose that calculating estimation values is made based on the distances between the respective surfaces of the polygon model before approximation and the vertices of the polygon model after approximation, amended independent claims 1 and 8, as well as dependent claims 3 and 14, are patentable over Garland, even when considered in view of Zarge. Consequently, the allowance of claims 1, 3, 8 and 14 is respectfully solicited.

II.   Claims 4-7, 15, 17-19, 21 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Garland in view of Li et al. (hereinafter, Li).

The rejections are respectfully traversed

The Examiner bases the present rejection on the description from column 12, lines 22-35 of Li. This portion describes that two edge collapse operations, which are independent of each other, are implemented with respect to a common layer in implementing the edge collapse operation. This portion does not necessarily disclose that an edge collapse operation will not be

implemented with respect to the portion of the layer which has been subjected to the two-edge collapse operations in a sequent processing (i.e., processing that follows the two-edge collapse operations time-series), namely, that the portion of the layer under the influence of the two-edge collapse operations will not be defined as a reduction prohibition area where application of a succeeding edge collapse operation is prohibited. Consequently, Li neither discloses nor suggests defining of the reduction prohibition area as recited in independent claims 4 and 15.

Thus, independent claims 4 and 15, as well as dependent claims 5-7 and 17-19, 21 and 22, are patentable over Garland and Li considered alone or in combination. Consequently, the allowance of claims 4-7 and 15, 17-19, 21 and 22 is respectfully solicited.

III. Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Garland in view of Li, as applied to claim 15, and further in view of Zarge.

However, as independent claim 15 is patentable over Garland and Li, claim 20 depending from claim 15, is patenable over Garland and Li also, even when considered in view of Zarge.
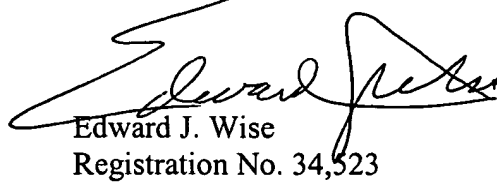
CONCLUSION

Accordingly, it is urged that the application, as amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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